

1. A nuclear camera system in which pixel data is scatter corrected prior to image processing comprising:

an image processor coupled to the scatter corrector which produces an image from scatter corrected count data.

3. The nuclear camera system of Claim 2, wherein the radionuclide producing emissions at the higher energy level produces background scatter at the photopeak at the lower energy level.

5. The nuclear camera system of Claim 4, wherein the radionuclides are Tc and Tl.

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7. The nuclear camera system of Claim 6,
wherein the radionuclides are Tc and Xe.

5 8. The nuclear camera system of Claim 1,
wherein the act of mathematically combining is an
additive process.

10 9. The nuclear camera system of Claim 1,
wherein the act of mathematically combining is a
subtractive process.

15 10. The nuclear camera system of Claim 1,
wherein the scatter corrector acts to correct for
scatter on a pixel by pixel basis.

 11. The nuclear camera system of Claim 1,
wherein the multiple energy windows are overlapping.

20 12. The nuclear camera system of Claim 1,
wherein the multiple energy windows occupy adjacent
energy channels.

25 13. A method for performing a nuclear medicine
lung perfusion study comprising:

 applying a first carrier labeled with a first
radionuclide to the blood flow system which becomes
distributed in capillaries of the lungs;

30 applying a second carrier labeled with a second
radionuclide to the lungs by inhalation; and

 imaging both radionuclides simultaneously with a
gamma camera.

35 14. The method of Claim 13, wherein the first
carrier is macro-aggregated albumin.

16. The method of Claim 13, wherein the second carrier is a gas.

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15 19. The method of Claim 13, wherein imaging
comprises producing a first nuclear image of a
radionuclide distributed in a lung on the basis of
blood flow; and

producing a second nuclear image of a
20 radionuclide distributed in a lung on the basis of
aeration.